

PESTICIDE DRIFT PETITIONS

Appeals for assessing and managing risks
December 2010

1

In the last year or so, the Agency received two separate petitions on the subject of pesticide drift.

One requested changes to address risk to children from drift

The other came from citizens concerned about drift from pesticides on forested slopes above their homes.

Represented on the Drift Petitions Workgroup

- Office of Children's Health Protection
- Office of Environmental Justice
- Office of General Counsel
- OPP
 - HED
 - EFED
 - FEAD
 - PRD
- USEPA Region 10

2

OPP consulted with Office of Children's Health and Office of Env. Justice, then formed a workgroup for the 1st of these petitions

Later, the group took on the second petition

The workgroup is formed of representatives from ...

Agenda

- Petition to protect children from drift
 - Summary
 - Public Comments
- Petition from citizens in Oregon impacted by treatment of timberland
 - Summary
 - Public Comments
- How to respond

Environmental Justice Implications of the two petitions

EPA's criteria for assessing EJ impacts

- √ √ Proximity to environmental hazards
- √ √ Susceptible populations
- √ Unique exposure pathways
- √ Multiple/cumulative pollutant exposures
- √ Ability to participate in decision-making process
- Physical infrastructure
- ?? Chronic risks

4

Environmental Justice is *the fair treatment and meaningful involvement ...[of all people] regardless of race, color, ...origin, or income*

with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

[is] achieved when everyone [experiences] the same degree of protection from environmental and health hazards [where they live, learn, and work] and equal access to the decision-making process

Fair treatment--*no group of people should bear a disproportionate burden of environmental harm*

EJ more an issue for the petition to protect children from drift , but relevant to OR stakeholders too because they felt they were not "meaningfully involved"

Meaningful Involvement –

- 1) *opportunity to participate in decisions that will affect their environment and/or health;*
- 2) *the public's contribution can influence the regulatory agency's decision;*
- 3) *the concerns of all participants will be considered*
- 4) *the decision-makers seek out and facilitate involvement of potentially affected people*

Unique exposure pathway exposures due to *practices linked to cultural background or socioeconomic status*

Multiple stressors *pesticide exposures introduced by parents who work in the fields, kids exposed to drift firsthand outdoors at school and at the park, live near the treated fields*

Infrastructure *poor housing, poorly maintained public buildings (e.g., schools), or proximity to highways or other infrastructure*

PESTICIDES IN THE AIR — KIDS AT RISK:
PETITION TO EPA TO PROTECT CHILDREN FROM PESTICIDE DRIFT

- Earthjustice and Farmworker Justice
- Calls for EPA to:
 - immediately adopt interim no-spray buffer zones for “toxic drift-prone pesticides”
 - 60 feet for ground applications
 - 300 feet for aerial applications
 - expeditiously evaluate pesticide drift exposure to children and impose appropriate mitigation
 - make assessment of drift exposures to bystanders (inc. children) a regular part of pesticide decision-making

5

October 2009; on behalf of other organizations including United Farmworkers, PANNA, Physicians for Social Responsibility, MomsRising; calls for EPA to...

Homes, schools, parks, daycare, wherever children congregate

“toxic drift-prone pesticides”: singled out organophosphates and n-methyl carbamates plus

all other pesticides that are applied with ground sprayers, broadcast equipment, or aerial equipment; suspected of causing acute poisonings, cancer, endocrine disruption, developmental effects, or reproductive effects.

assessments should be routine

Public Comments

- About 60 unique comments
- Several write-in campaigns
- Some comments pertained more to drift PRN or were submitted to both dockets
- Divided by sentiment, with some substantive comments on risk and assessment methodologies

6

About 60 individual comments

More than half were either requests to extend comment period or were intended for the drift PRN docket

(13 requests to extend, 24 intended for PRN docket)

(drift PRN docket comment period concurrent, comment periods extended)

17, 000 individuals submitted comments as part of a write-in campaign

13 individual comments generally supporting petition

6 individual comments generally opposing petition

3 Substantive supporting (NRDC, PANNA, Farm Worker Pesticide Project)

2 Substantive opposing (CLA/RISE, Minor Crop Farmer Alliance)

Public Comments, cont'd.

- Petitioners: calculated that buffer widths to achieve MOEs above 100 (dermal + incidental oral exposures only) should be at least 100' (ground app) to >1000' feet (aerial app)
- Crop Life America/RISE
 - Rebuttal based on drift incident reports
 - Proposed assessment /decision-making methodologies
- Farmers, agricultural suppliers, forestry groups generally: buffers not needed and burdensome
- Farmworker & environmental advocacy groups, private citizens & organic growers generally: additional protections needed

7

Petitioners calculated protective buffer widths for 5: carbofuran, chlorpyrifos, diazinon, ethoprop & tribufos

Used approach we used to model drift for AZM (didn't actually run AgDrift but back-calculated from AZM results to find portion of applied material expected to come off the application site as drift)

EPA methods, endpoints, uncertainty factors, and assumptions

(FQPA U_F for OPs = 100, for carbofuran = 10)

Did not include inhalation exposures

Widths of mostly 100 to >1000' for ground, greater than 1000' aerial (vs. the original 60' ground ,300' aerial)

Crop Life—distinguishes between drift as a consequence of bystander exposures at the time of application and exposure to drift residues present on surfaces

Proposed methodology seems to have some merit; concluded that buffers discussed in petition would result in severe economic impacts to ag

Minor Crop Alliance—since Agency already requires data on potential for drift & sets labeling conditions, already protective

"A Call for Help...from...Oregonians...Harmed by Timber Industry Aerial-Sprayed Pesticides"

- Pesticide Poisoning Victims United, Division of Pitchfork Rebellion
- Calls for EPA to:
 - Conduct study on appropriate aerial spray buffer zone for area, climate
 - Implement aerial buffer zone around homes & schools of one mile, first in the area and then in similar situations
 - Investigate influence of big business on EPA, esp. in relation to policies on aerial application of pesticides
- PRD DD and Regional staff met with petitioners
- Region undertook in-depth site visit to evaluate conditions
- Petitioners involved technical experts on drift and forest management practices
- EPA workgroup: some petition claims questionable, but plausible that conditions could result in movement further off-site than would be expected on most agricultural land; may require new model

8

"A Call for Help Via Three Proposed Actions from Forest-Dwelling Oregonians who Have been Harmed by Timber Industry Aerial-Sprayed Pesticides"
submitted January 2010

Pesticide Poisoning Victims United, A Division of The Pitchfork Rebellion
"Pitchfork Petition"

Geographically narrow but given timing and FWJ/EJ petition, claims of EPA partiality) we opened docket and solicited public comment

PARC (OR Pesticide Analytical and Response Center) formed to investigate and report incidents and trends in incidents; board includes reps from ODA, ODF, other State agencies ; petitioners feel State agencies are resistant to investigating incidents

Petitioners feel that PARC is unresponsive and the notification process required by OR law is inadequate



Oregon Coastal Range

The petitioners live along the Highway 36 Corridor in western Lane County, Oregon, between Eugene and the Pacific Coast. Ninety-percent of Lane County is forested, and half of the private land in Lane County is owned by timber companies. Weyerhaeuser Corporation is the largest of these.

9

Lane County Oregon along Highway 36 in the Coastal Range

Area has unique topography--slopes of 35 to 65% with valleys in between

Clear cut but must leave standing trees

Foresters use herbicides, including sulfonyl ureas, to establish transplants

Spray with helicopters at height to avoid standing trees

Sites are sprayed approx 2X every five to ten years, but valleys surrounded by spray sites (harvest at 30-50 years)

OR Forest Practices Act --no aerial herbicide applications within 60 feet of streams that provide drinking water or contain fish (no buffers for homes, schools, etc.)

New spray drift model may be needed for area's specific characteristics (aerial applications at altitude above steep slopes-->drift into valleys)

Public Comments

- About 180 comments
- Most comments from individuals & environmental advocacy groups anecdotal or testimonial; many the result of write-in campaign
- Spray Drift Task Force, Crop Life America, foresters, forest product companies, and contract applicators opposed the petition and cited Oregon forestry law and regulations

10

Most comments provided no new hard data *per se* but many commenters cited personal experience and some cited ill effects from drift exposure

Industry felt that OR FPA was adequately protective, provided background on use pattern and practices of aerial applicators

How to Respond

- Petitioners and commenters both expect their submissions to be addressed
- Responses to both can build on current activities; must be appropriate to scope, state-of-the-science, and available resources
- Engage with petitioners on plans for responding

11

Petitions differ in characteristics of affected populations; scope of impacts

We solicited public comment in both cases; seem to expect response; some explicit in comments on desire for response

Proposed Farmworker Justice/ EarthJustice Petition Response

- Imposing interim, generic buffer requirements
 - requires a level of scientific support (e.g., individual assessments) that precludes action in the short-term
 - not needed if drift is unlikely (e.g., soil incorporated granular)
 - does not balance degree of risk reduction/impacts to agriculture
- Tap into ongoing Agency initiatives that address pesticides & children, pesticide drift assessment & risk management

Proposed Farmworker Justice/ EarthJustice Petition Response, cont'd.

- Resources for unscheduled assessments outside registration review and standard PRIA actions are limited.
- Implement tiered approach
 - Is a quantitative assessment needed?
 - If so, can a decision be made with available data (e.g., monitoring)?
 - If not, use predictive exposure models.

13

Last bullet

To conserve resources and focus on higher priority cases, implement tiered approach...

Consider

- 1) is active ingredient "drift-prone"
- 2) for what application methods/use patterns is drift likely to occur
- 3) does the pesticide have residential uses with adequately protective MOEs are found

Using Current Initiatives to Address Drift Concerns and Pesticide Risks for Children

- **Assessment**
 - Methods for predicting drift for occupational/residential risk assessments (e.g., AgDrift, air monitoring data)
 - Residential SOPs
 - Volatilization SAP
 - Use of air monitoring data
 - 10X policy
- **Risk management**
 - Spray Drift Labeling and Drift Reduction Technology
 - Worker protection rulemaking
 - School siting initiative
- **Environmental justice**
 - Factoring impacts into process and decision-making

14

Petition does not distinguish between drift, volatilization, and off-site movement of contaminated dust

Recent school siting guidance specifically mentions pesticides and drift

Farmworker Justice/ EarthJustice Petition Response-- Recommendations

- The workgroup recommends that the assessments needed to support risk management decisions on drift & bystanders including children (e.g., no-spray buffers) be conducted as a regular part of scheduled reviews (registration review, registration decisions for new chemicals or new uses).
- Use a tiered approach on candidates for drift risk reduction
- Assessments can rely on current methodologies, but may be refined as we gain experience

15

Assessments conducted for pesticide use patterns conducive to drift (considering whether residential uses are allowed), using chemical-specific data as needed, WOE approach considering incidents; impact of mitigation measures on risks (nozzle specifications, etc.)

Farmworker Justice/ EarthJustice Petition Response— Recommendations

- Some of the pesticides identified by the petitioners as “drift-prone, toxic pesticides” have already begun or are approaching registration review (OPs, NMCs).
- Others are defined broadly (by application method or association with various endpoints), so that revising the schedule to accommodate the large number of active ingredients with these criteria would be impractical.
- The workgroup recommends a meeting with the petitioners to outline plans; seek input on particular pesticides/scenarios of heightened concern

16

“drift-prone” is not just a function of pesticide characteristics but also on use pattern esp. application methods

Registration Review Schedule for OPs and NMCs with Potential for Drift

Preliminary risk assessment date	Active ingredient	Family	Docket opening
2011	chlorpyrifos	both are OPs	3/2009
	profenofos		6/2008
2013	acephate	all are OPs	3/2009
	chlorethoxyfos		12/2008
	diazinon		6/2008
	dicrotophos		6/2008
	dimethoate		3/2009
	phorate		3/2009
	ODM		6/2008
	naled		3/2009
	terbufos		6/2008
	temephos (ck uses)		6/2008
	tetrachlorvinphos		6/2008
	tribufos		3/2009
2014	trichlorfon	all are OPs	3/2009
	DDVP		6/2009
	ethoprop		12/2008
	malathion		6/2009
	phosmet		6/2009
2015	phostebupirim	OP OP NMC NMC NMC NMC NMC NMC	6/2009
	mevinphos		6/2009
	bensulide		6/2008
	carbaryl		9/2010
	formetanate HCl		9/2010
	methiocarb		6/2010
	methomyl		9/2010
	oxamyl		9/2010
	thiodicarb		12/2009

17

As indicated by use pattern, formulation type, and application method

Default date for registration review decision is approximately one year after release of preliminary risk assessment

Chlorpyrifos is also subject to another petition and ongoing litigation, was moved up in the queue to be responsive to those concerns

The cases are scheduled the way they are because of their importance, the cumulative assessment, and because new data are expected that could affect endpoints for neurotoxicity (inc. CCA) and degradates

Proposed Pitchfork Petition Response

- Region 10 is engaged with petitioners
- Problem is geographically specific
- As residential areas encroach on forestry areas, more residents may feel/be affected by drift
- Region 10 is engaging OR Departments of Agriculture & Forestry and timber companies
- Workgroup proposes that OPP provide support to Region on outreach and mediation, explore expansion of drift assessment methodologies to account for unique aspects of forestry applications

18

Unique aspects---terrain, flight patterns, equipment, weather/air movement

"Asks" and Proposed Answers

- The FWJ/EJ petitions calls on EPA to:
 - expeditiously evaluate pesticide drift exposure to children and to mitigate as appropriate—*As needed, integrate into scheduled decisions*
 - immediately adopt interim no-spray buffer zones for "toxic drift-prone pesticides"—*Not feasible*
- The Pitchfork petition calls for EPA to:
 - Implement generic 1-mile aerial buffer zone for homes/schools—*Not feasible; assist Region in outreach and mediation*
 - Conduct study on aerial buffer zone for area, climate—*Develop model appropriate to topography, unique conditions*
 - Investigate influence of big business on EPA, esp. aerial application of pesticides—*Cite measures in place to prevent conflict of interest*

19

Pitchfork

May need to develop model or adequately address uncertainties

Conflict of interest—public docket (+ more from OGC?)

Timeline: FWJ/EJ Petition

- January 2011: Meet with petitioners
- Early 2011: Draft responses to petition & comments
- Develop timeline for routine consideration of drift in human health risk assessments and implement; tie in related initiatives.
- Ongoing: Refine methodologies/models as science develops

20

Timeline: Pitchfork Petition

- January 2011: Draft responses to petition and comments
- Ongoing:
 - Assist Region 10 in outreach, mediation
 - Develop drift modeling for broader set of conditions

Closing remarks

- Actions must be consistent with commitment to protect children and to Environmental Justice
- Some issues are beyond EPA authorities
 - Non-working children brought to fields by farmworker parents (in lieu of daycare)
 - State laws on forestry practices
 - Look for opportunities to connect with other Agencies
- Further development of methods may be needed to characterize drift in different situations, refine assessments, manage associated risks

22

Other agencies or groups of agencies